

Desert Southwest Region

Jack Murray

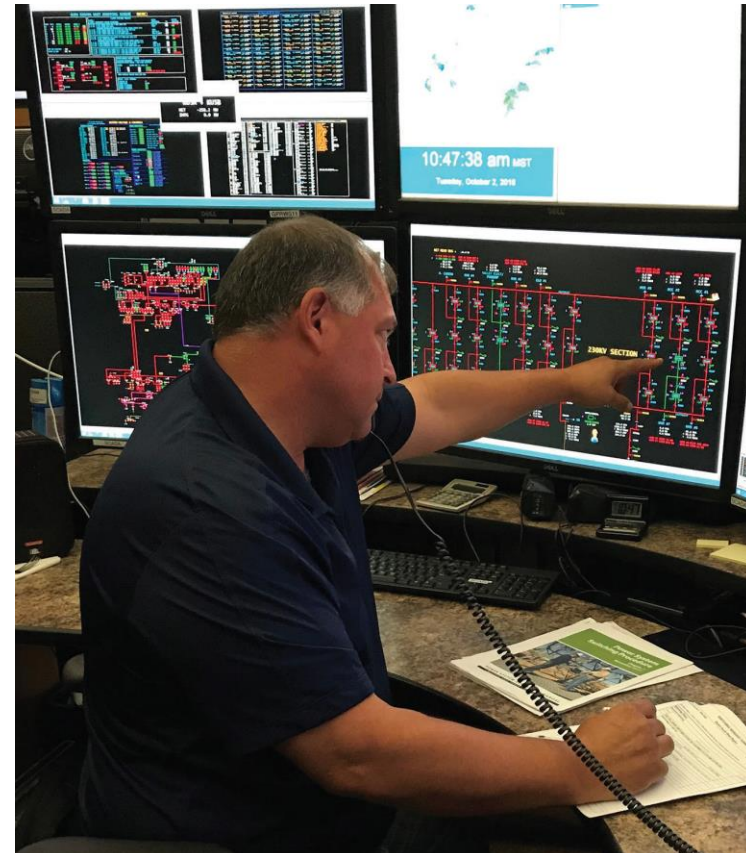
Vice President of Transmission System Asset Management

ATEA Annual Meeting - February 20, 2020

Energy Imbalance Study

Energy Imbalance

- Energy imbalance is the difference between energy scheduled and what is needed in real-time
- Additional energy imbalance is needed as renewable (variable) energy sources connect to the grid

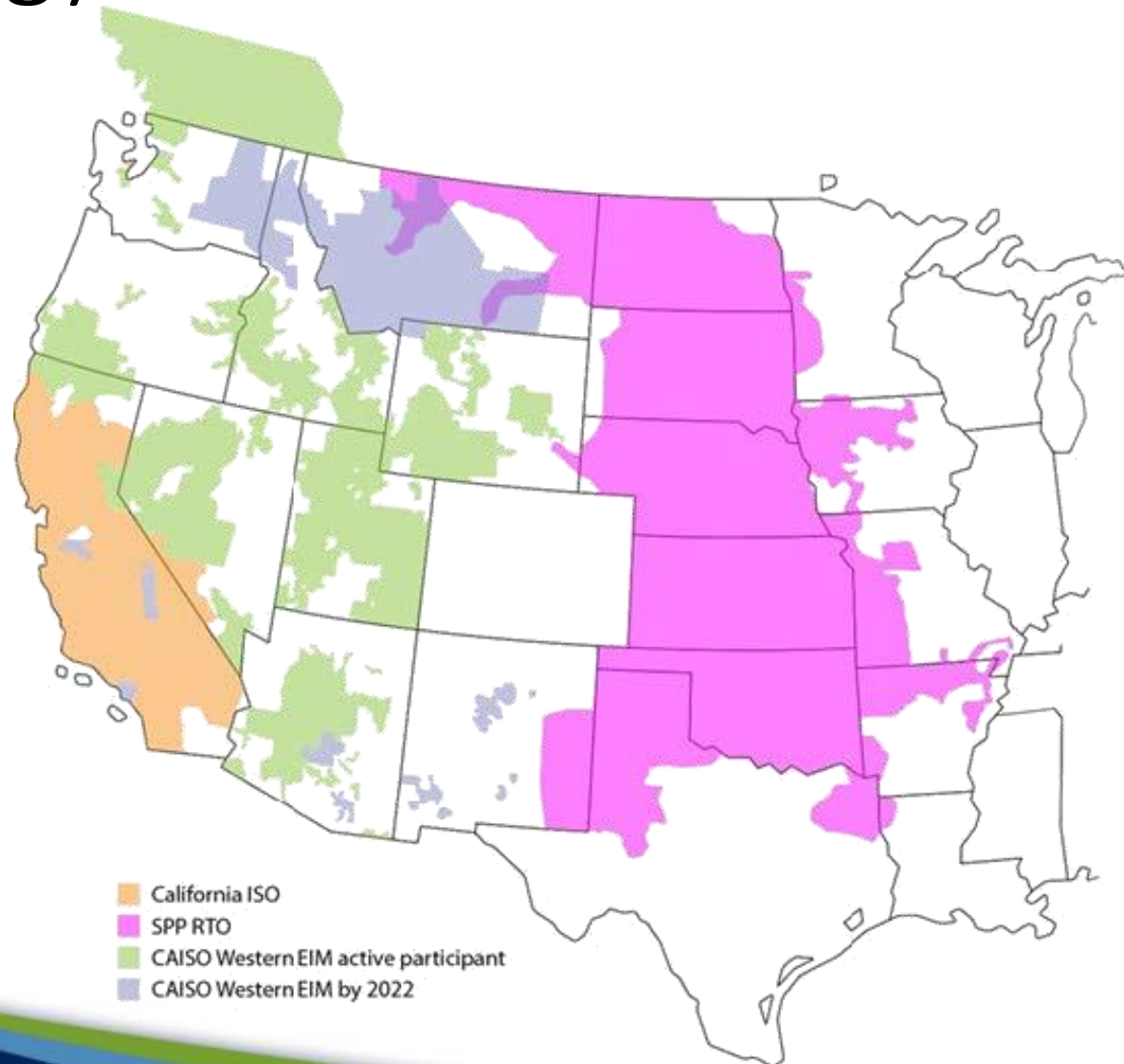


Desert Southwest Region's (DSW) Requirements

- DSW covers our energy imbalance requirements with purchases and capacity not used for Firm Electric Service
- The status quo is not sustainable, so we must consider other sources to support our requirements



Energy Imbalance Markets



Tailored Approach

- Sierra Nevada Region is joining CAISO's Energy Imbalance Market (EIM)
- Colorado River Storage Project, Rocky Mountain, and Upper Great Plains regions are joining SPP's Western Energy Imbalance Service (WEIS)
- DSW is studying the cost and benefits of EIM and WEIS with its customers

Energy Imbalance Study



- Study Participants:
 - DSW
 - Arizona Electric Power Cooperative
 - Central Arizona Water Conservation District
 - Southwest Public Power Agency
- Contracted with E3 for benefits analysis and Utilicast for cost/gap analysis

Energy Imbalance Study

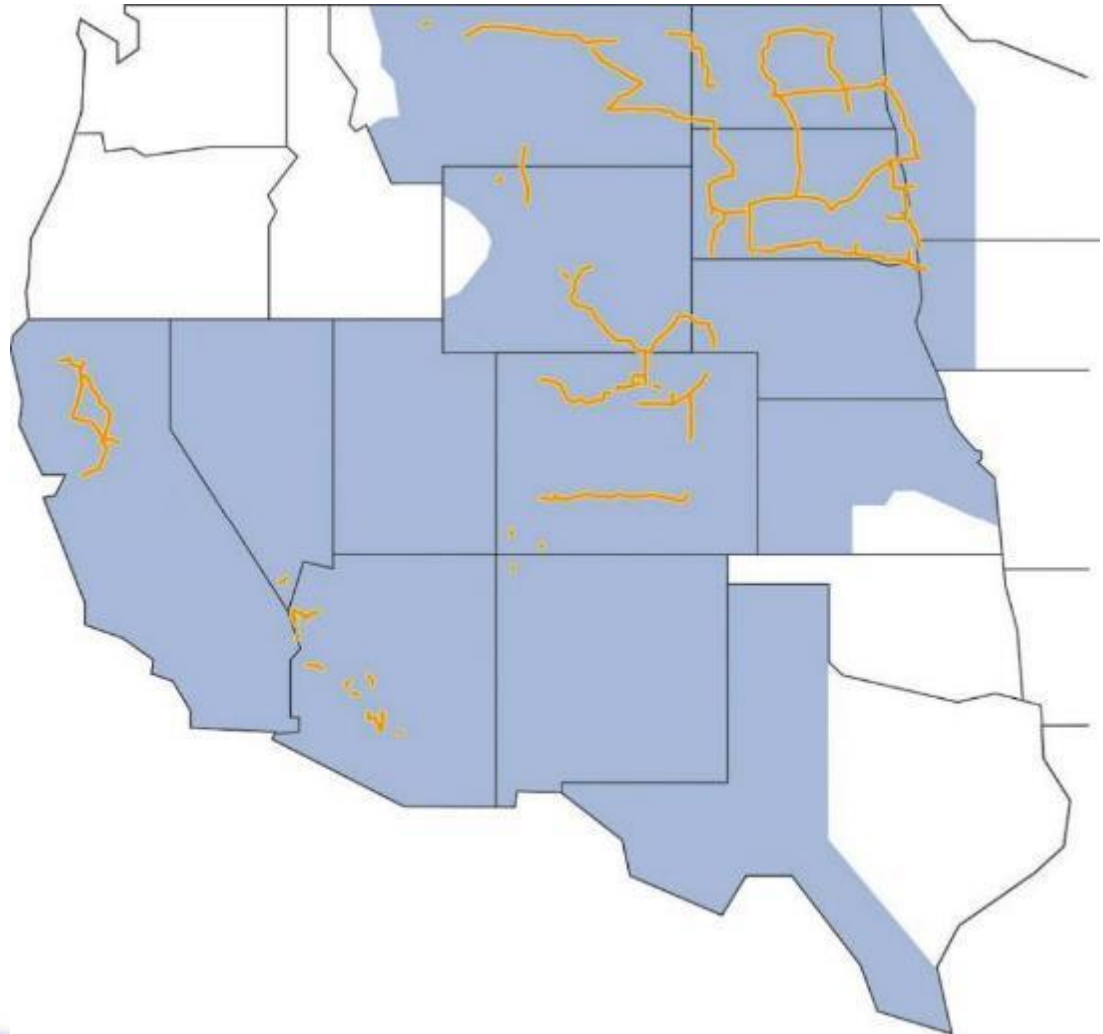
- Argonne National Laboratory is working with DSW and will support both the E3 and Utilicast analyses
- Currently finalizing study parameters and topology with E3 and participants. Began meeting with Utilicast this week.
- Study work to be completed by the end of summer of 2020

<https://www.wapa.gov/regions/DSW/Pages/DSW-EIM.aspx>

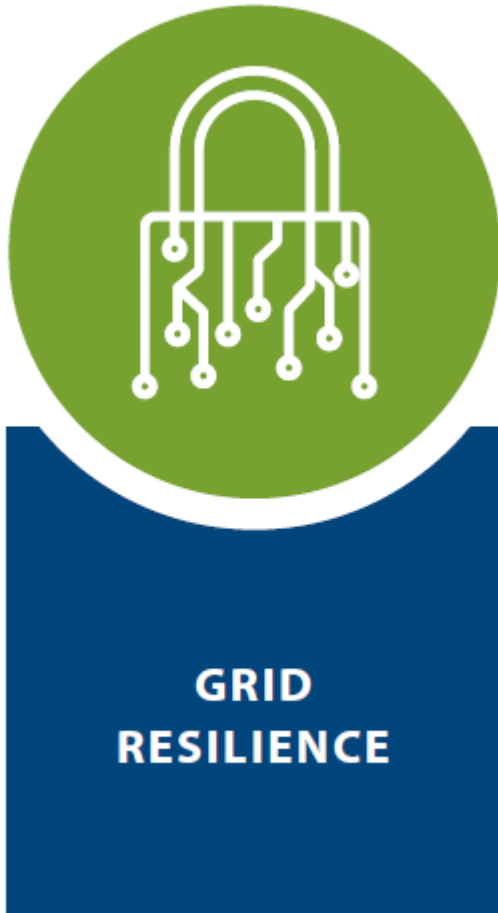
Fiber Optic Partnerships

WAPA's System

- 5,500 miles of overhead fiber optic groundwire
- Provides communication necessary to support power operations



Tactical Action Plan

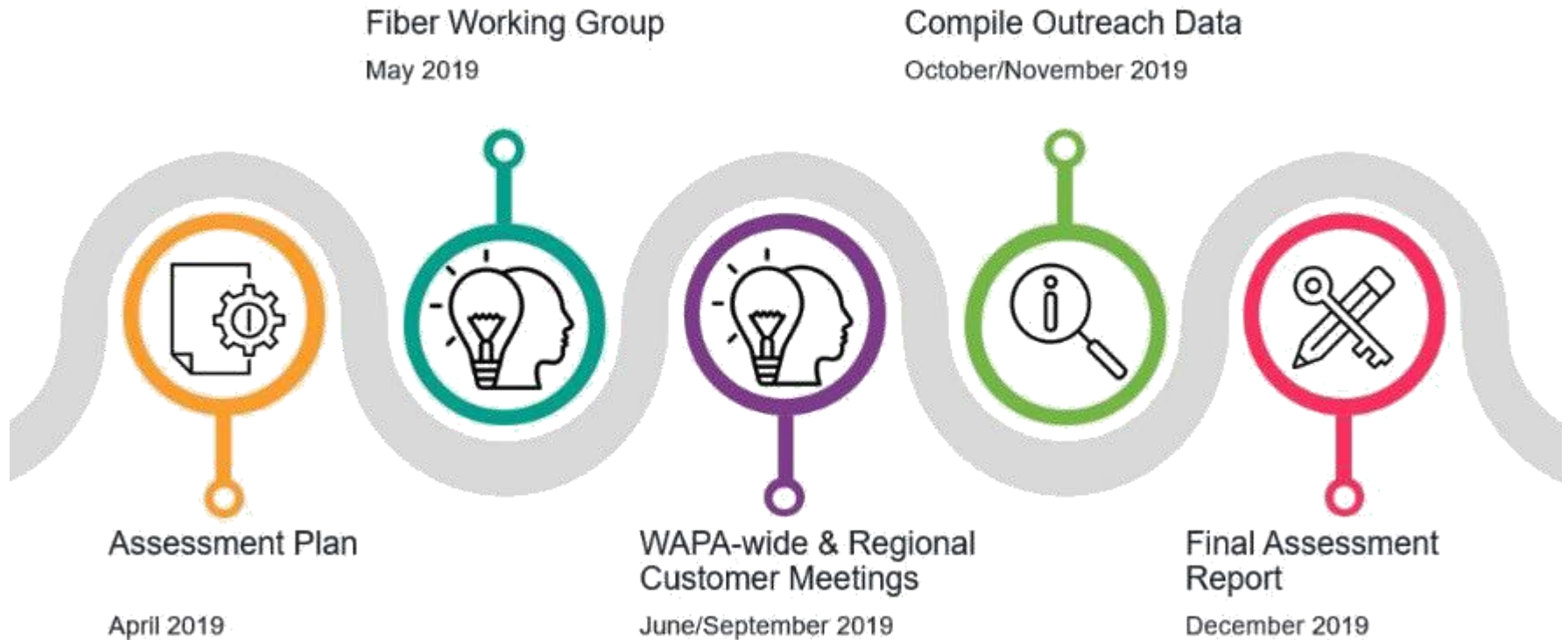


- Explore additional opportunities to use WAPA's fiber assets
- WAPA will explore leveraging its fiber assets to:
 - Improve its communication capacity to support current and future technologies
 - Improve support to customers
 - Support grid resilience with the Departments of Energy and Defense
 - Support the Presidential Broadband Initiative

American Broadband Initiative

- A report will be completed by the Department of Commerce, National Telecommunications and Information Administration
- Required WAPA and the Southwestern Area Power Administration to complete a feasibility assessment
- Determine if excess fiber can be leased to customers and broadband service providers

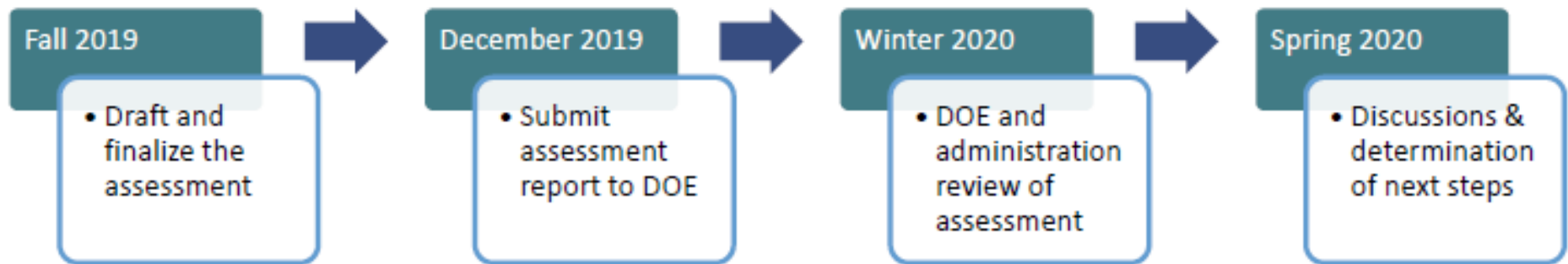
2019 Customer Outreach



Summarized Customer Input

- Interest
 - Aid connectivity to rural areas
 - Increase redundancy/resiliency of existing networks
 - Enable cost-sharing and partnerships on tribal lands
- Priorities/Goals
 - Not impact delivery of power
 - Beneficiary pays
- Challenges/Concerns
 - Authority to enter into partnerships/expansion
 - Cost allocation among users

Next Steps

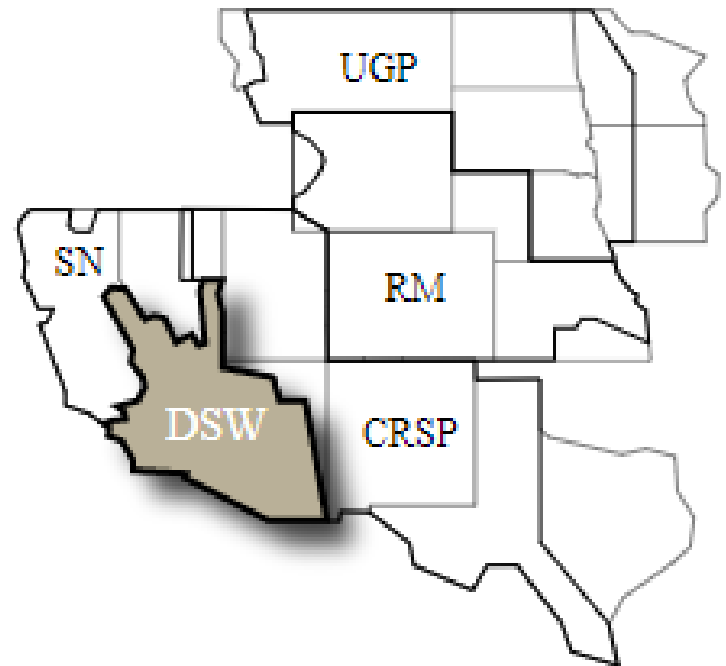


<https://www.wapa.gov/About/keytopics/Pages/fiber-feasibility-assessment.aspx>

Other Updates

DSW's Regional Manager

- Ron Moulton retired December 2019 after 30 years of service
- Tracey LeBeau, WAPA's Chief Administrative Officer, is the Acting Senior Vice President and Regional Manager for DSW



Parker-Davis Project Remarketing



- Identified by customers in July 2019 as a top initiative
- Existing power allocations and Firm Electric Service contracts expire September 30, 2028

Parker-Davis Project Remarketing

- Need to consider how to remarket the project:
 - Extend existing allocations or allow the opportunity for new allocations
 - Firm product or an alternative
- At the request of customers, we will initiate preliminary discussions about remarketing in the summer of 2020

Combined Transmission Rates



- Also identified as a key initiative by customers
- Currently separate rates for DSW's transmission systems:
 - Central Arizona Project
 - ED5-PVH
 - Intertie Project
 - Parker-Davis Project

Combined Transmission Rates

- Separate transmission rates result in inefficient use of transmission systems and additional costs for customers that need to use multiple systems (pancaked)
- Rates of individual transmission systems are converging and projects are financially congruent
- Performing modeling now and will initiate discussions later this year about combining the rates

Questions / Comments



Contact Information

Jack Murray

(602) 605-2440

jmurray@wapa.gov



602-605-2525



wapa.gov



@westernareapowr



WesternAreaPower1